United States Department of Agriculture

Water and Climate Update

December 10, 2020

The Natural Resources Conservation Service produces this weekly report using data and products from the National Water and Climate Center and other agencies. The report focuses on seasonal snowpack, precipitation, temperature, and drought conditions in the U.S.

Record breaking precipitation in Southeast Alaska

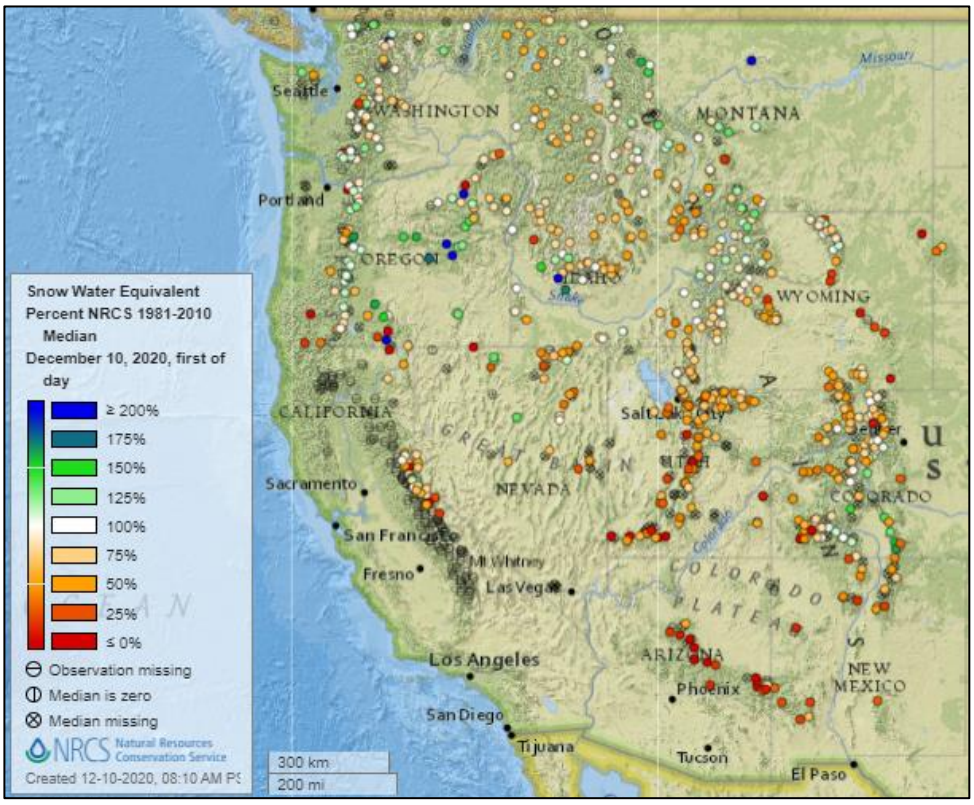
Location	New Record	Date	Previous Daily Record	Previous All Time Record
Pelican COOP	9.75"	Dec 2	3.10" / 2003	8.41" Nov 19, 2005
Haines #2 COOP	6.62"	Dec 2	1.37" / 2009	3.92" Nov 23, 2005
Skagway COOP	5.37"	Dec 2	0.84" / 2019	5.31" Dec 21, 1930
Juneau Airport	4.93"	Dec 1	1.44" / 1997	4.62" Oct 10, 1946
Hoonah COOP	4.70"	Dec 2	1.20" / 2019	3.65" Sep 25, 1996
Juneau Forecast Office	4.09"	Dec 1	2.04" / 2011	3.20" Nov, 20, 2004
Lena Point COOP	3.93"	Dec 1	1.28" / 2011	2.96" Oct 14, 2018
Juneau-Douglas WWTP COOP	3.60"	Dec 1	1.93" / 2011	3.04" Aug 10, 2020

An atmospheric river aimed at southeast Alaska broke precipitation records across the area. The 2-day storm had winds of 49-67mph and precipitation up to 9.75 inches at National Weather Service stations. Rainfall shattered several all-time rainfall records for several long-term reporting stations. The rainfall caused flooding and multiple mudslides, especially in Haines Alaska. Damage from the storm was also reported in 12 communities in the region. The ground remains saturated and at risk for additional mudslides.

Related:

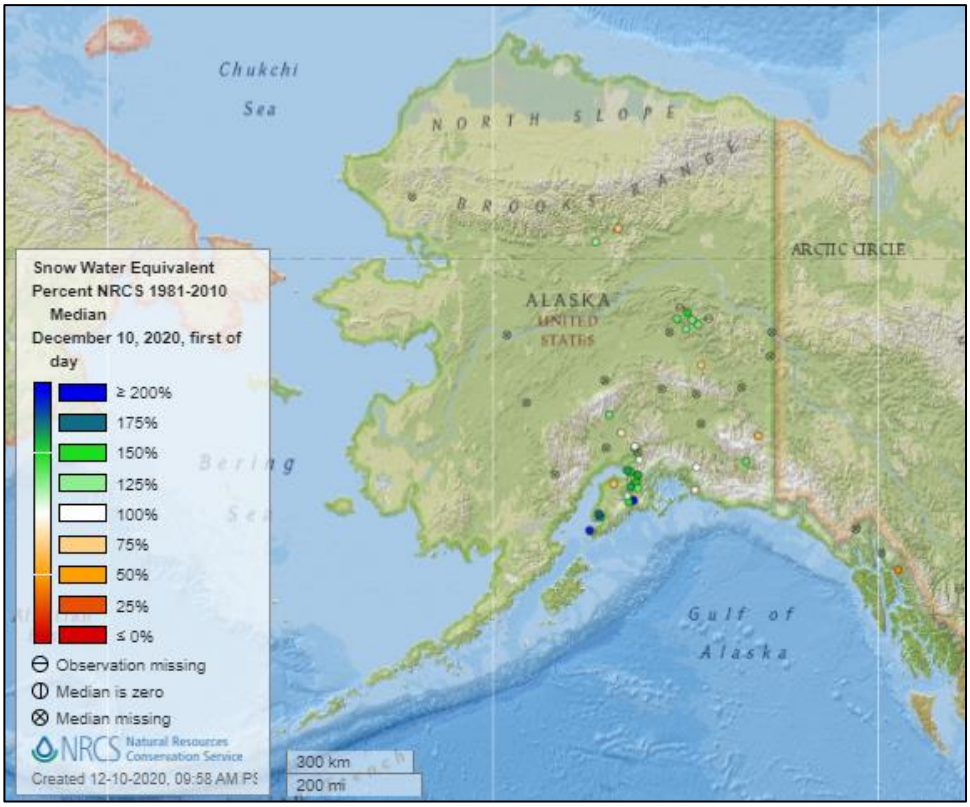
Around Southeast Alaska, communities assess damage from record-breaking storm – Alaska Public Media (AK)
'Very miserable conditions': More rain, snow forecast amid search for 2 people lost in mudslides in Haines, Alaska – USA Today
Alaska officials say landslide danger remains after storm **– AP**
Record-breaking rainfall leaves muddy mess across Southeast Alaska – KTOO (AK)
Juneau sets all time record for rainfall – KINY (AK)
USA – Record Rainfall Triggers Floods and Landslides in South East Alaska - Floodlist

Snow



[Snow water equivalent percent of median map]

See also:
[Snow water equivalent values (inches) map]

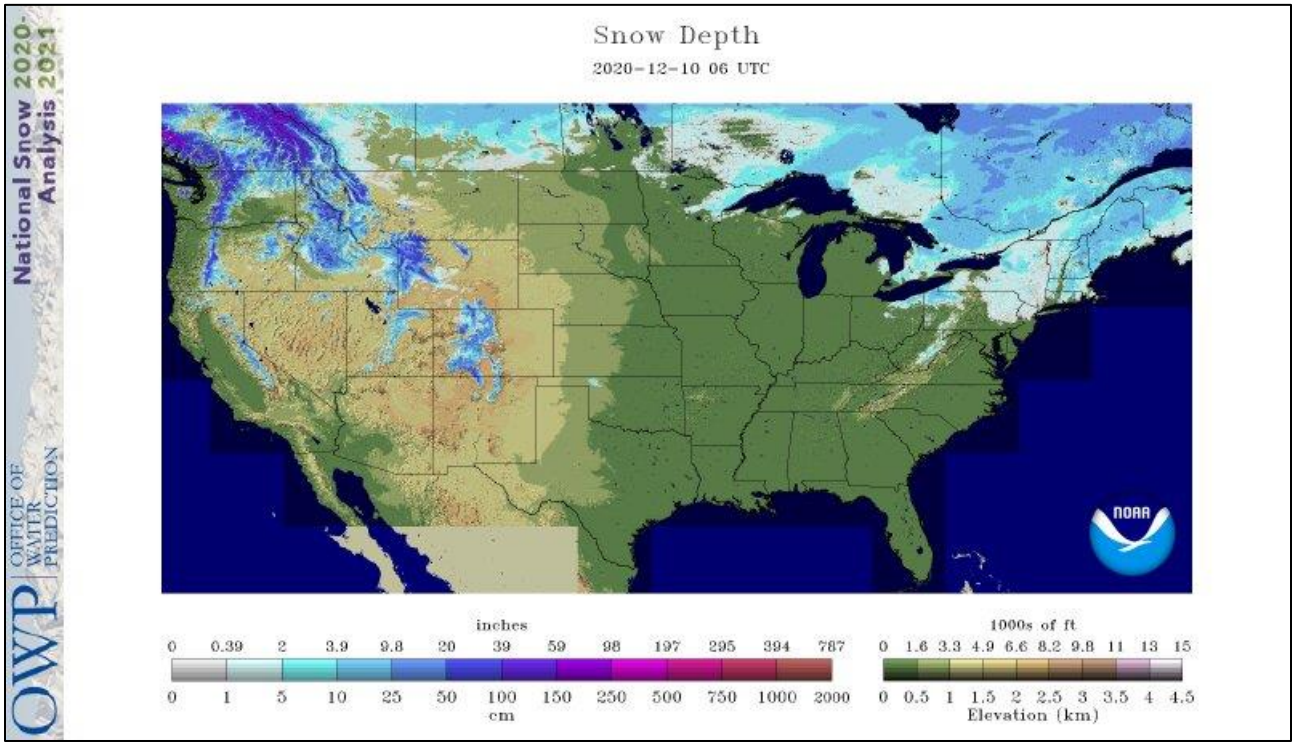


[Alaska snow water equivalent percent of median map]

See also:
[Alaska snow water equivalent values (inches) map]

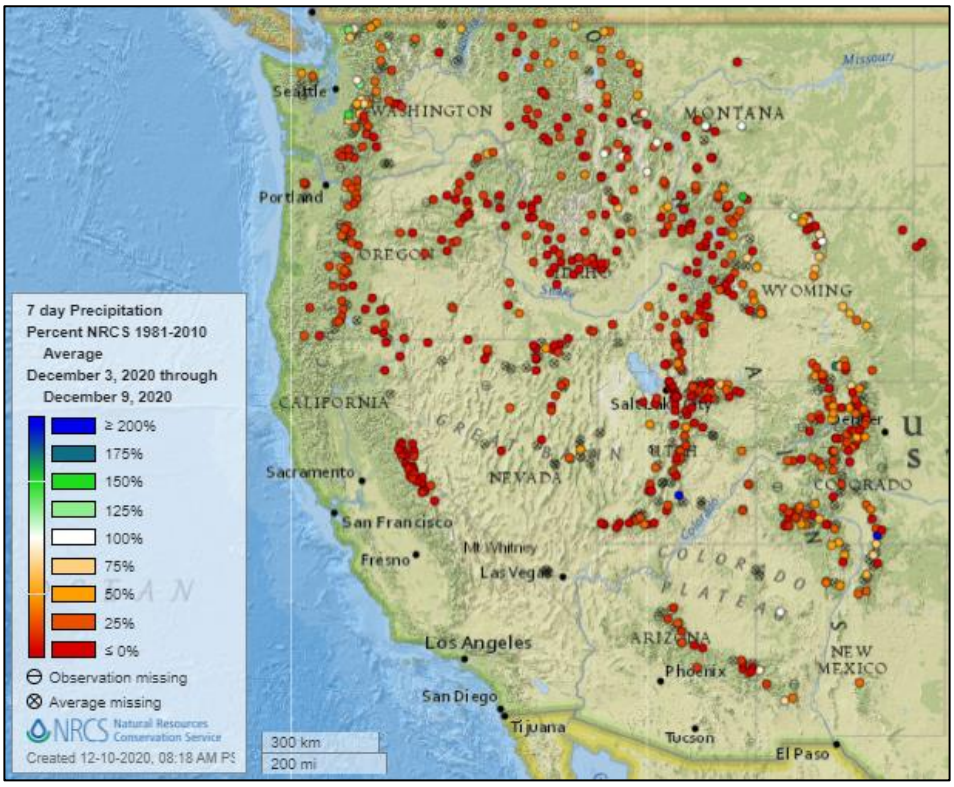
Current Snow Depth, National Weather Service Snow Analysis

Source: NOAA Office of Water Prediction



Precipitation

Last 7 Days, NRCS SNOTEL Network

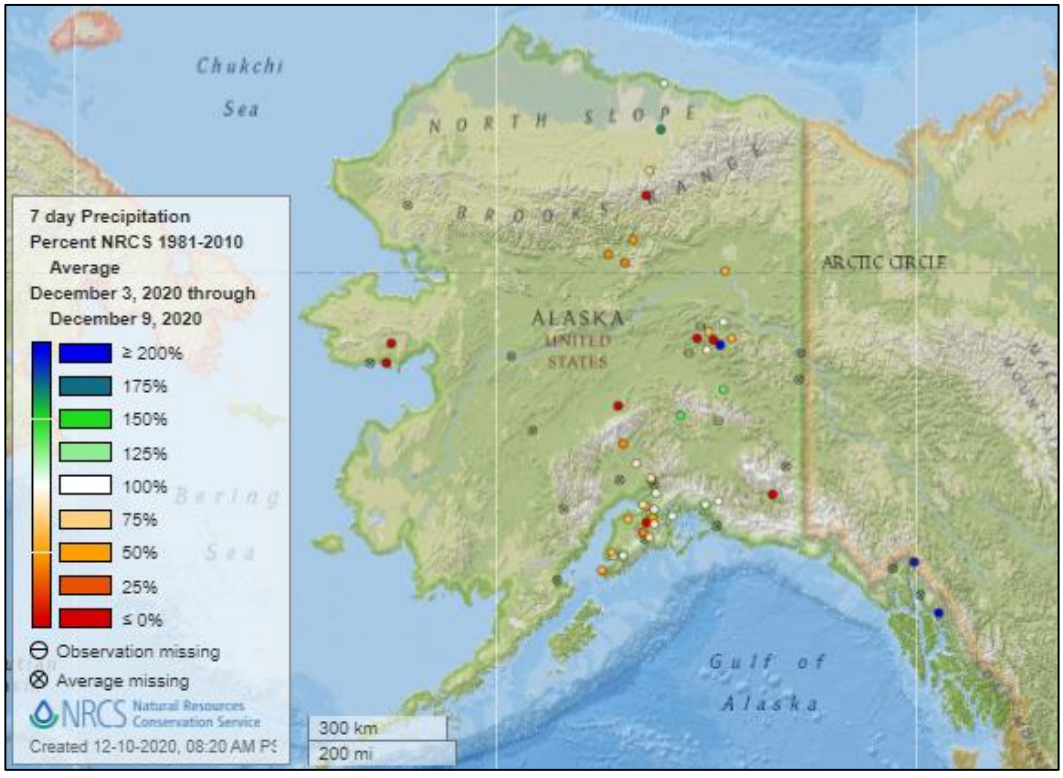


[7-day precipitation percent of average map]

See also:
[7-day total precipitation values (inches) map]

[Alaska 7-day precipitation percent of average map]

See also:
[Alaska 7-day total precipitation values (inches) map]

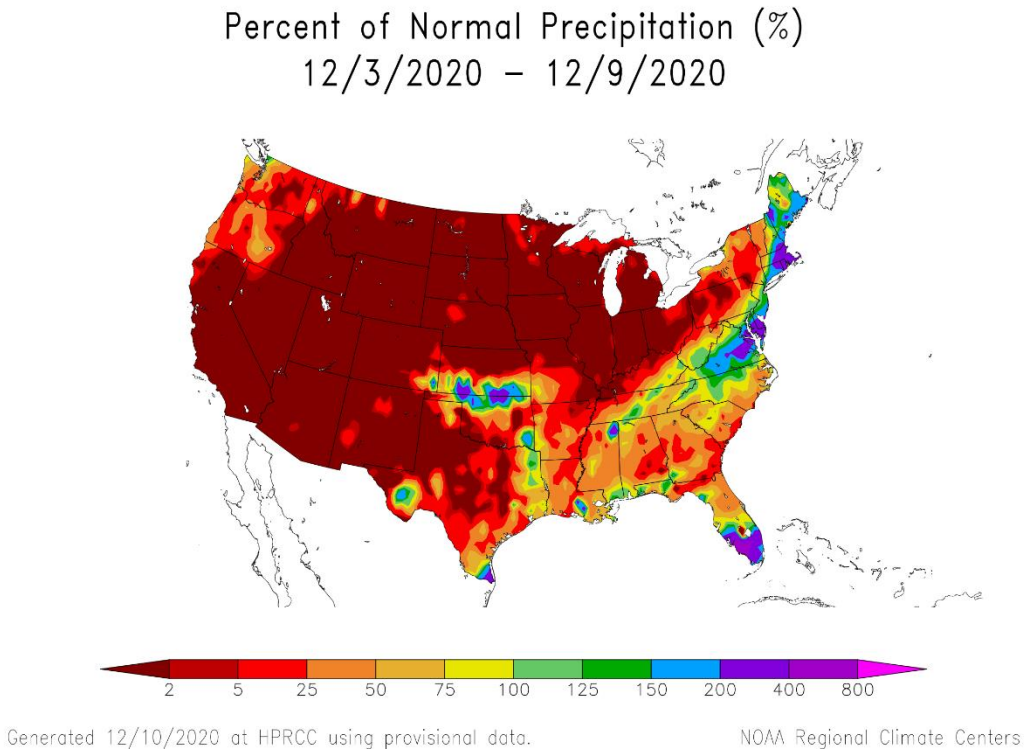


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

7-day precipitation percent of normal map for the continental U.S.

See also: 7-day total precipitation values (inches) map

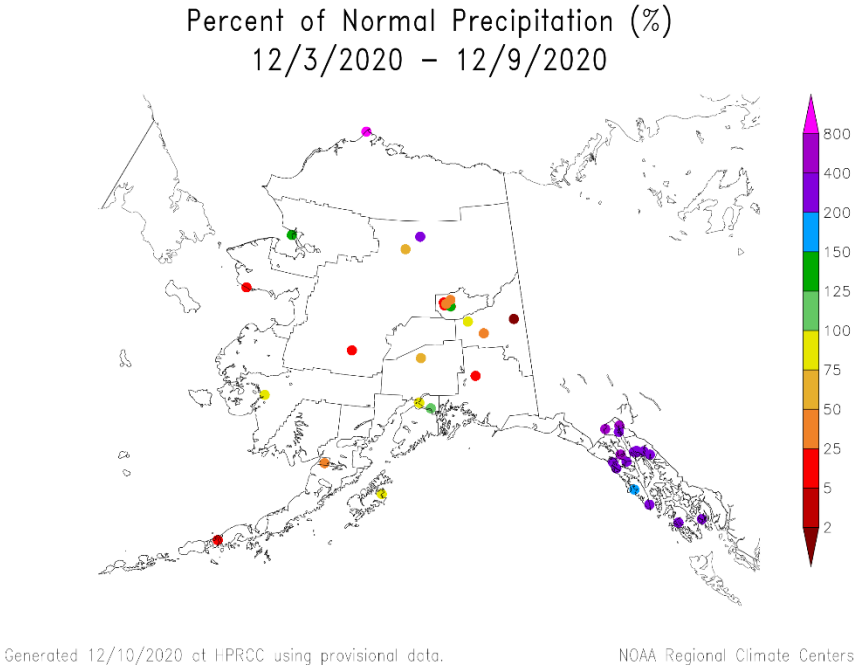


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

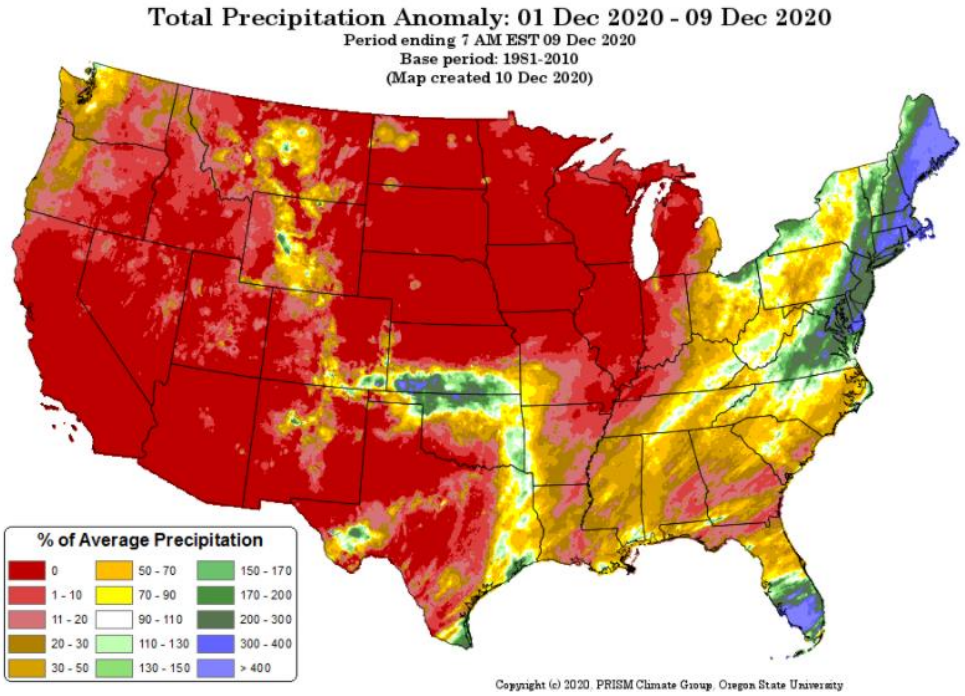
7-day precipitation anomaly map for Alaska.

See also:
7-day total precipitation values (inches) map



Month-to-Date, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

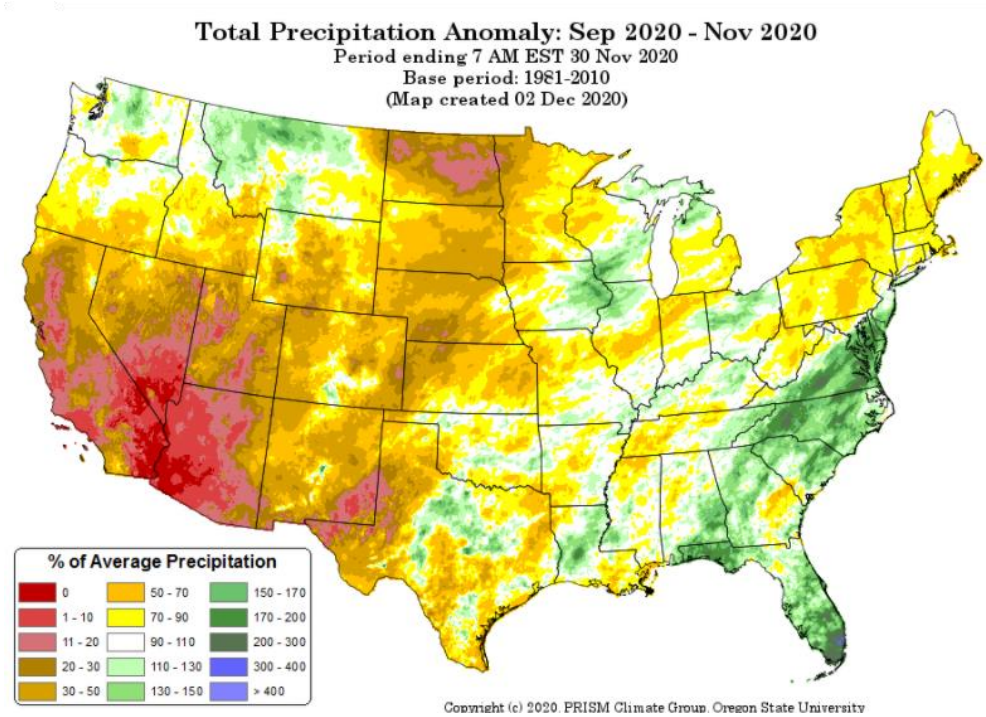


Month-to-date national total precipitation percent of average map

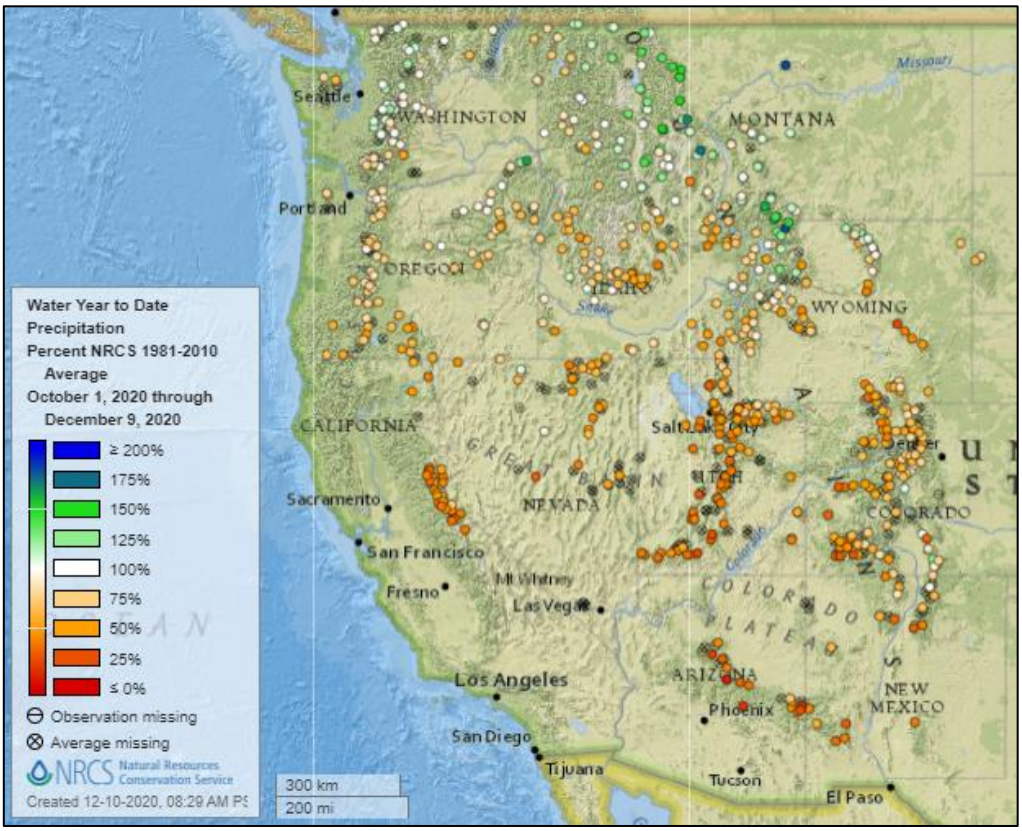
Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

September through November precipitation percent of average map

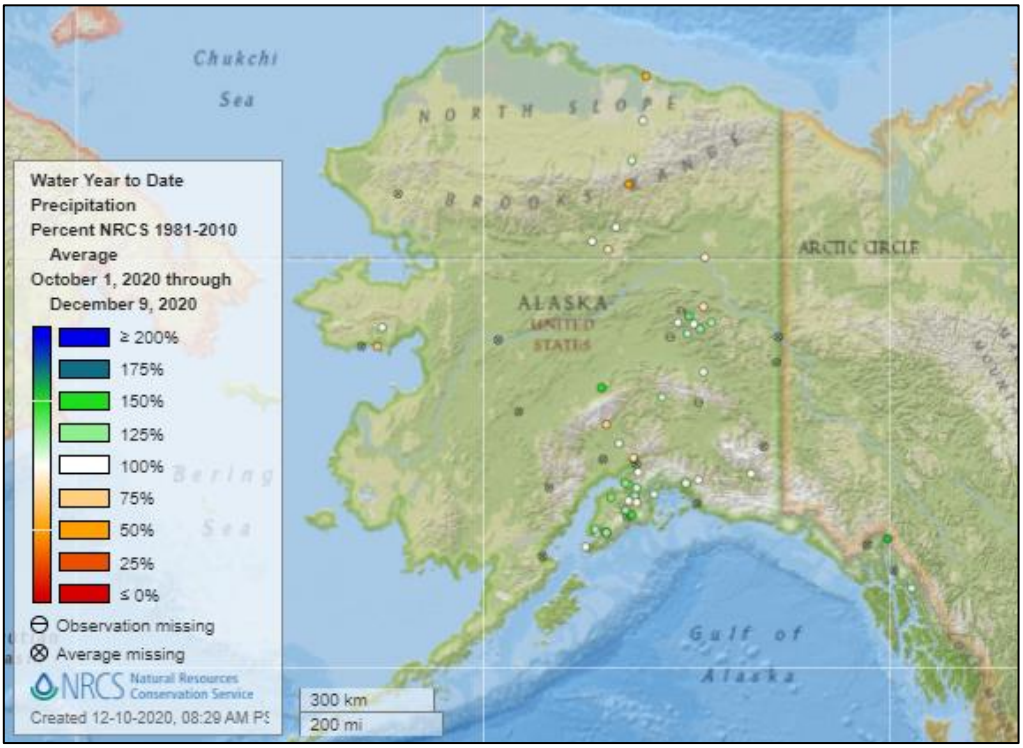


Water Year-to-Date, NRCS SNOTEL Network



[2021 water year-to-date precipitation percent of average map]

See also:
[2021 water year-to-date precipitation values (inches) map]



[Alaska 2021 water year-to-date precipitation percent of average map]

See also:
[Alaska 2021 water year-to-date precipitation values (inches) map]

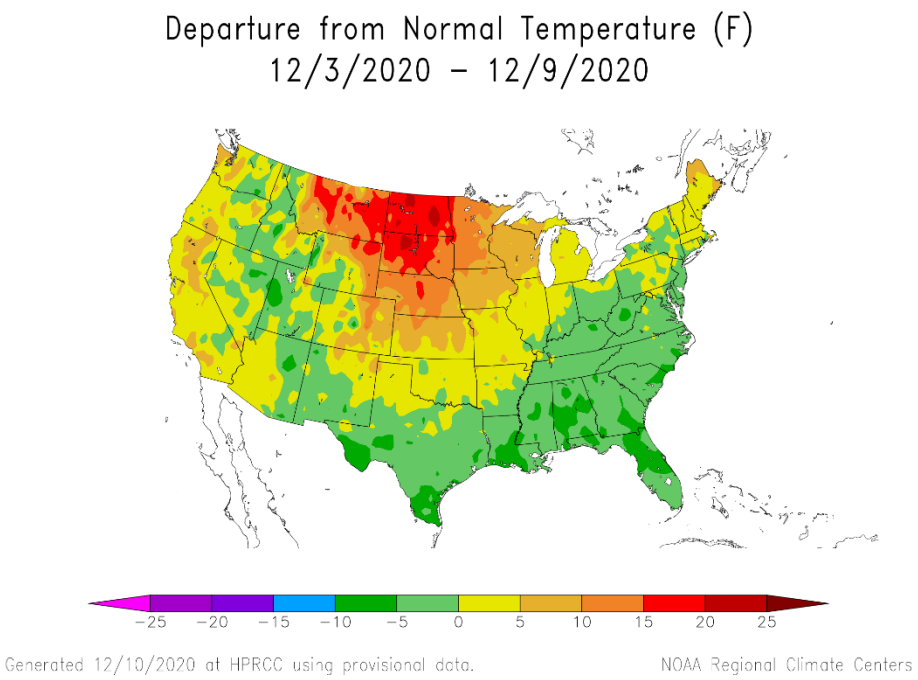
Temperature

Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

7-day temperature anomaly map for the contiguous U.S.

See also: 7-day temperature (° F) map

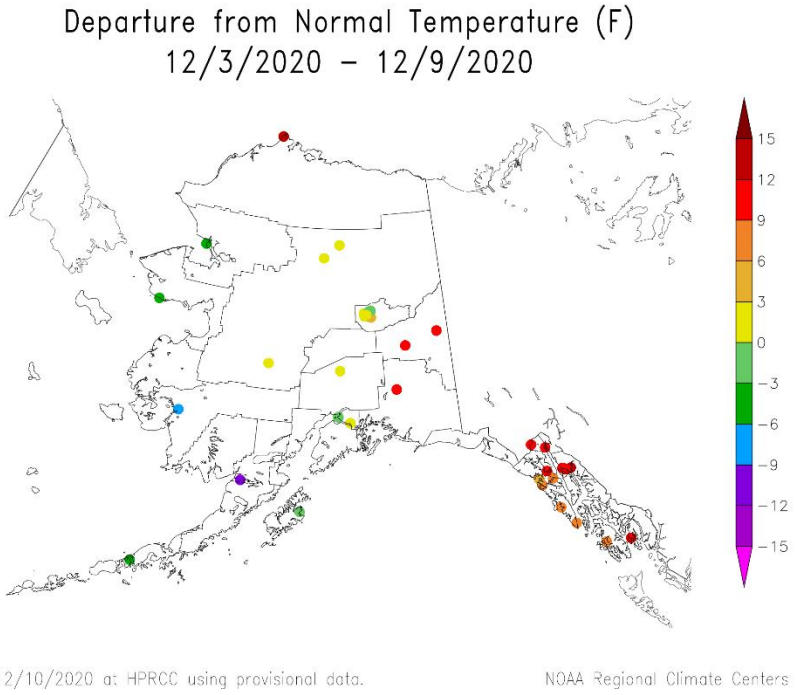


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

7-day temperature anomaly map for Alaska.

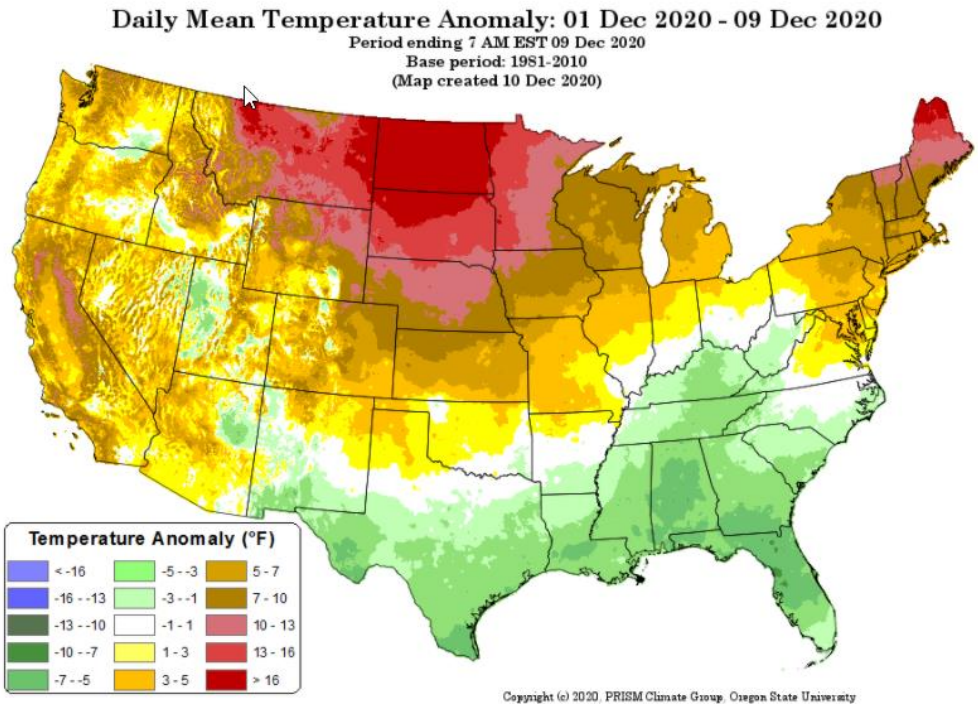
See also:
7-day temperature (° F) map



Month-to-Date, All Available Data Including SNOTEL and NWS Networks

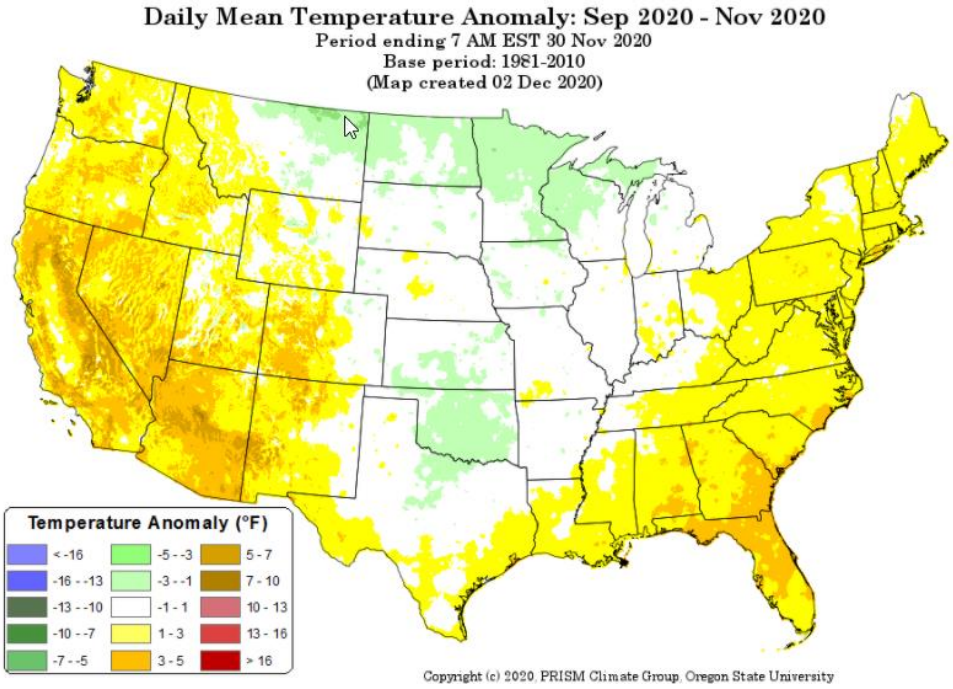
Source: PRISM

[Month-to-date national daily mean temperature anomaly map]



Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

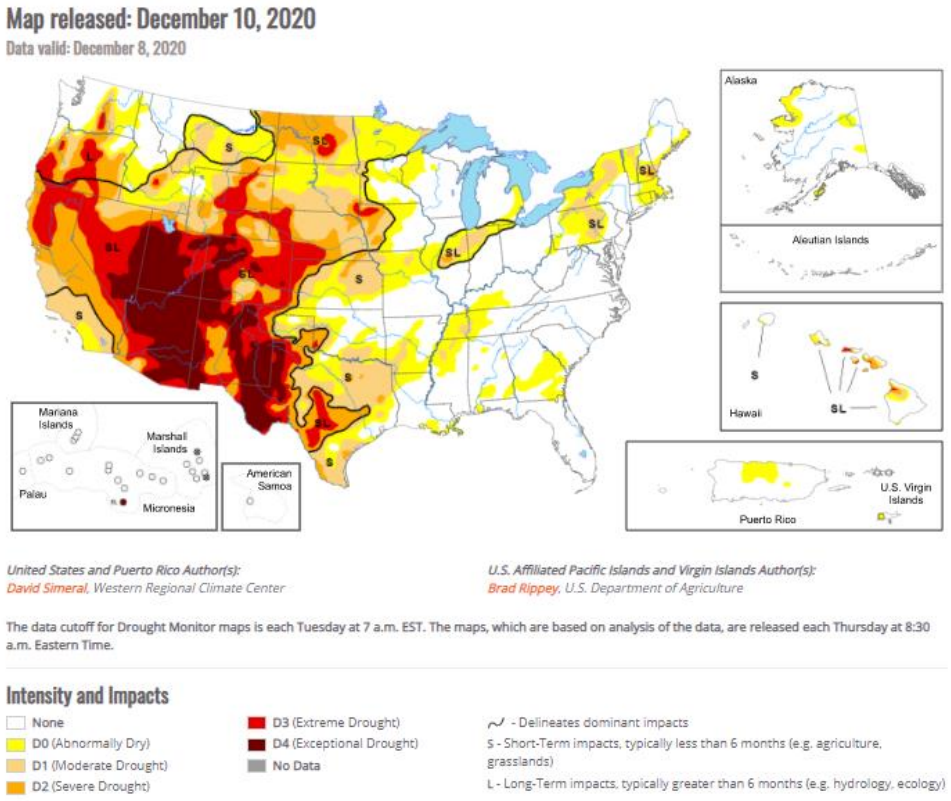


[September through November 2020 daily mean temperature anomaly map]

Drought

U.S. Drought Monitor
Source: National Drought Mitigation Center

U.S. Drought Portal
Source: NOAA



Current National Drought Summary, December 8, 2020

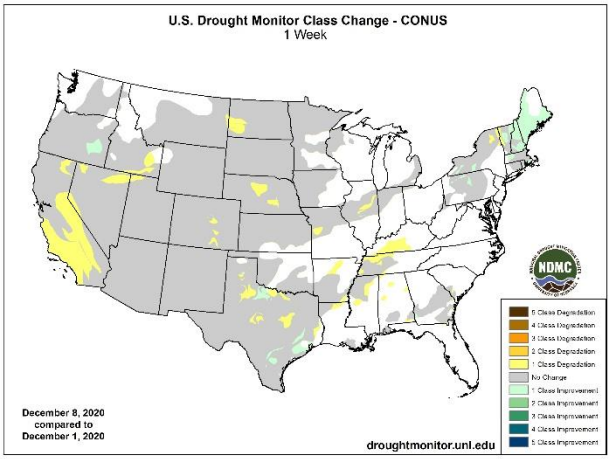
Source: National Drought Mitigation Center

"This U.S. Drought Monitor week saw intensification of drought across parts of the western U.S. including California, Nevada, and Colorado where precipitation has been below normal since the beginning of the Water Year (Oct 1). In California, statewide snow water content (SWE) is currently at 36% of the historical average for the date (Dec 7) and Water-Year-to-Date (WYTD) precipitation (statewide) is ranging from the bottom 10% to the bottom 33% with some areas in the Mojave Desert experiencing the driest on record for the period. According to NOAA's National Centers for Environmental Information (NCEI), the 6-month period from June to November 2020 was the hottest and driest on record for both Arizona and California. Current snowpack conditions across the West are generally reflective of a La Niña-like precipitation pattern with the mountain ranges in the Pacific Northwest and some areas of the northern Rockies observing near-normal to above-normal snowpack conditions. Further south in the Four Corners states, basin-wide (6-digit HUC) SWE is below normal in nearly all drainage basins in the region. Elsewhere on this week's map, areas of Texas including the Panhandle and central Texas saw some minor deterioration in conditions where both long and short-term precipitation deficits exist. In the Northern Plains, unseasonably warm temperatures and dry conditions continued this week leading to intensification of drought conditions in North Dakota where statewide precipitation for the September-November 2020 period ranked 3rd driest on record, according to NOAA NCEI. In New England, drought-related conditions significantly improved in response to heavy rains and snow associated with a Nor'easter that impacted the region during the weekend. The storm delivered heavy rains and strong winds to coastal areas as well as heavy snowfall in the mountains of New Hampshire and northern Maine."

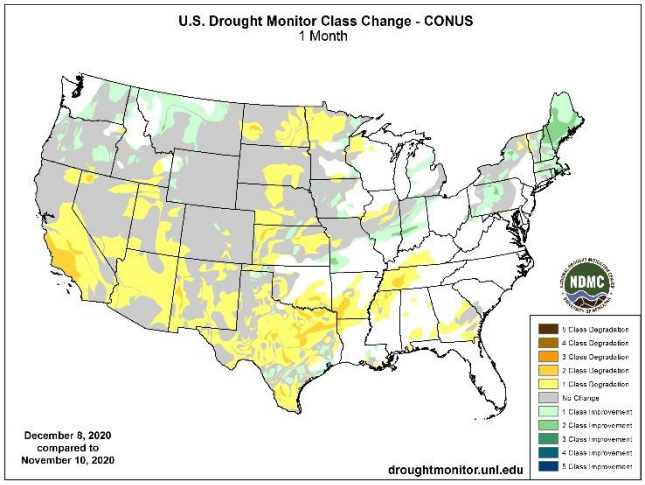
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

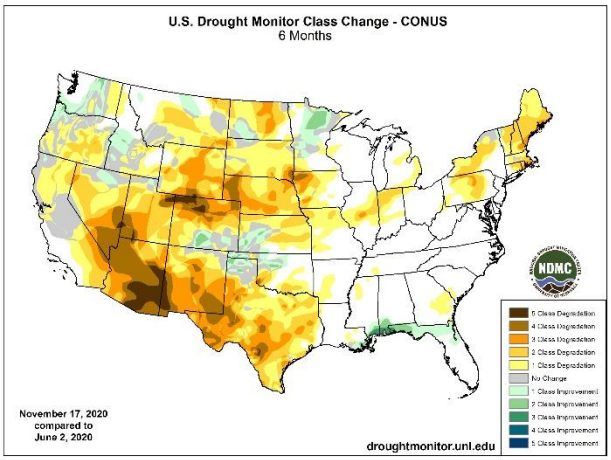
1 Week



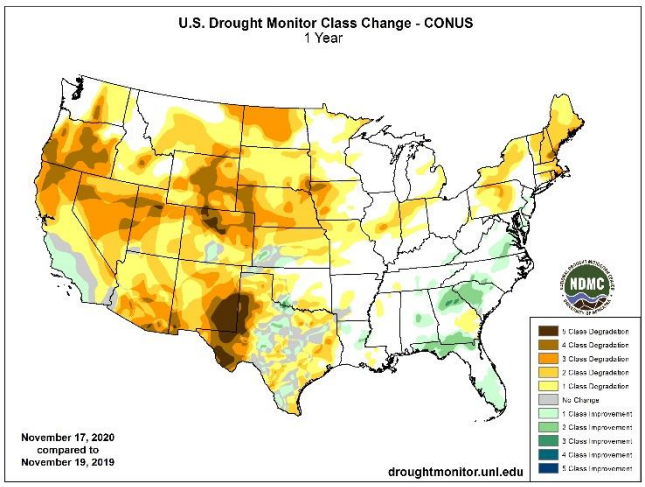
1 Month



6 Months



1 Year



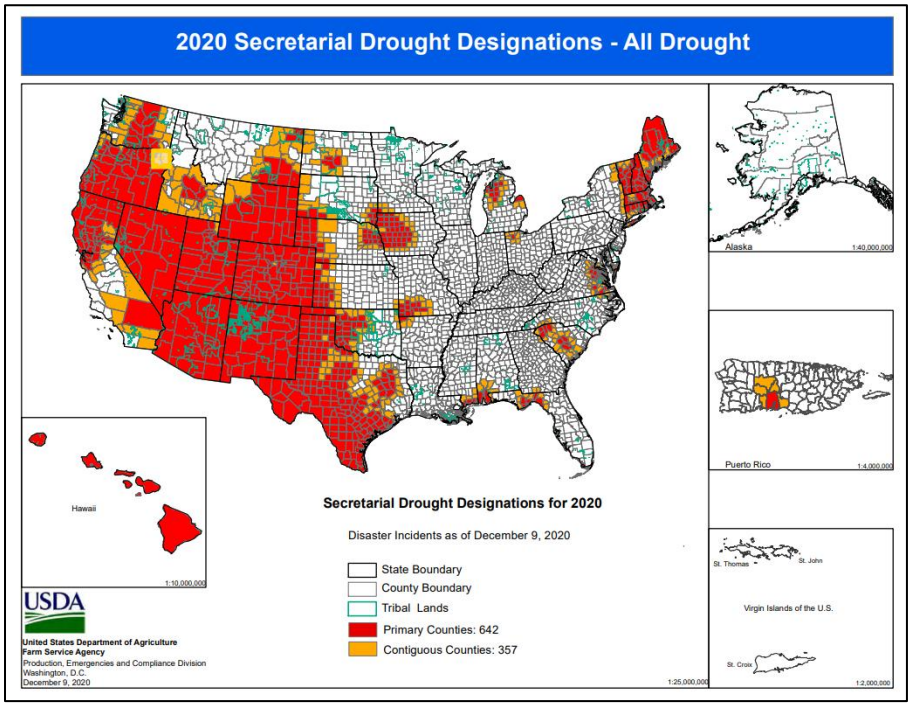
Changes in drought conditions over the last 12 months for the contiguous U.S.

Highlighted Drought Resources

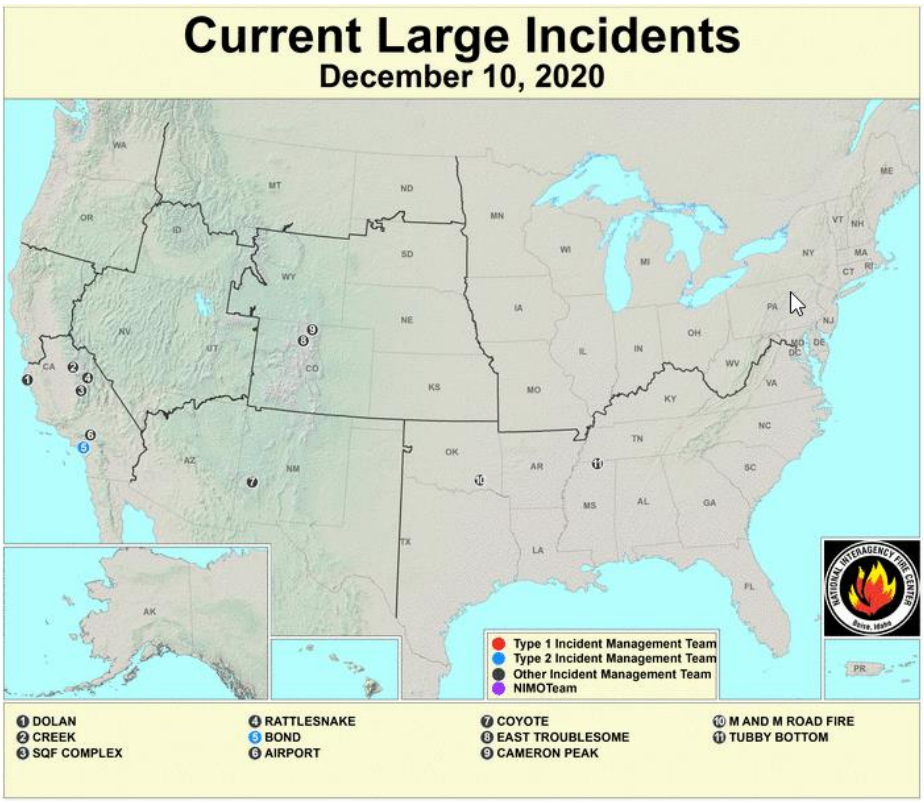
- Drought Impact Reporter
- Quarterly Regional Climate Impacts and Outlook
- U.S. Drought Portal Indicators and Monitoring
- U.S. Population in Drought, Weekly Comparison
- USDA Disaster and Drought Information

Secretarial Drought Designations

Source: USDA Farm Service Agency



Wildfires: USDA Forest Service Active Fire Mapping



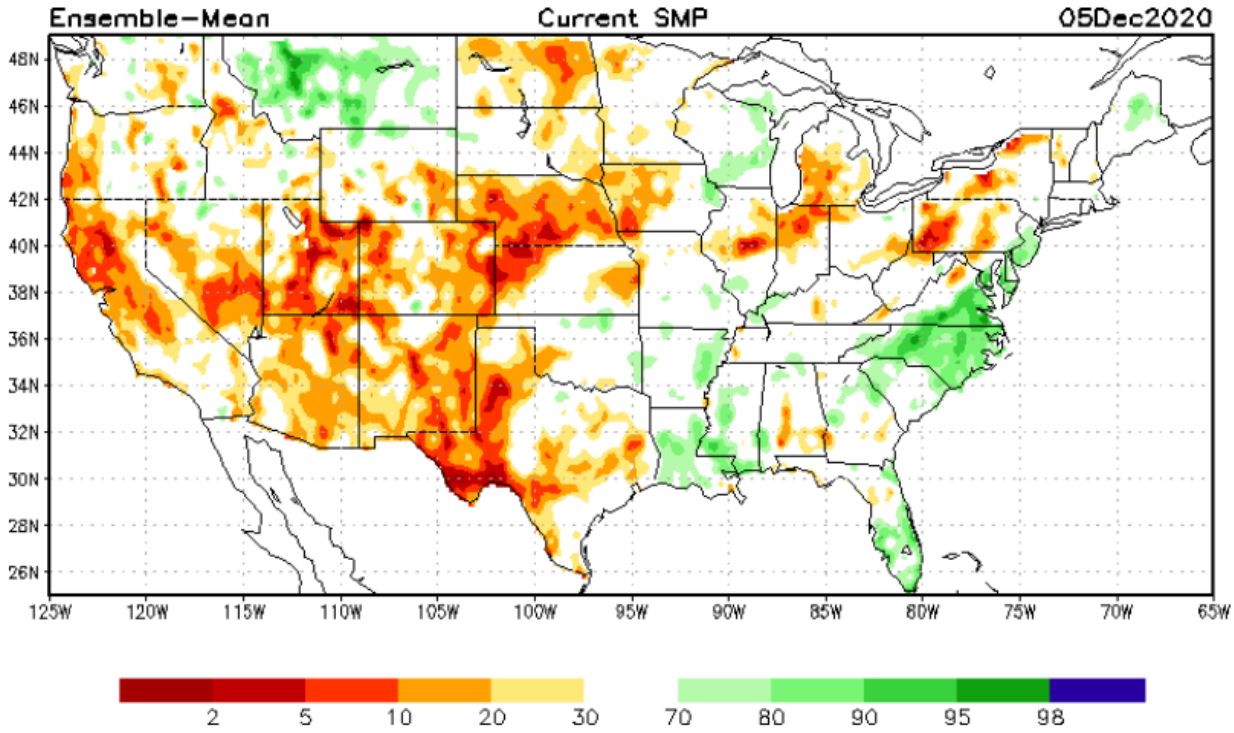
Highlighted Wildfire Resources

- National Interagency Fire Center
- InciWeb Incident Information System
- Significant Wildland Fire Potential Outlook

Other Climatic and Water Supply Indicators

Soil Moisture

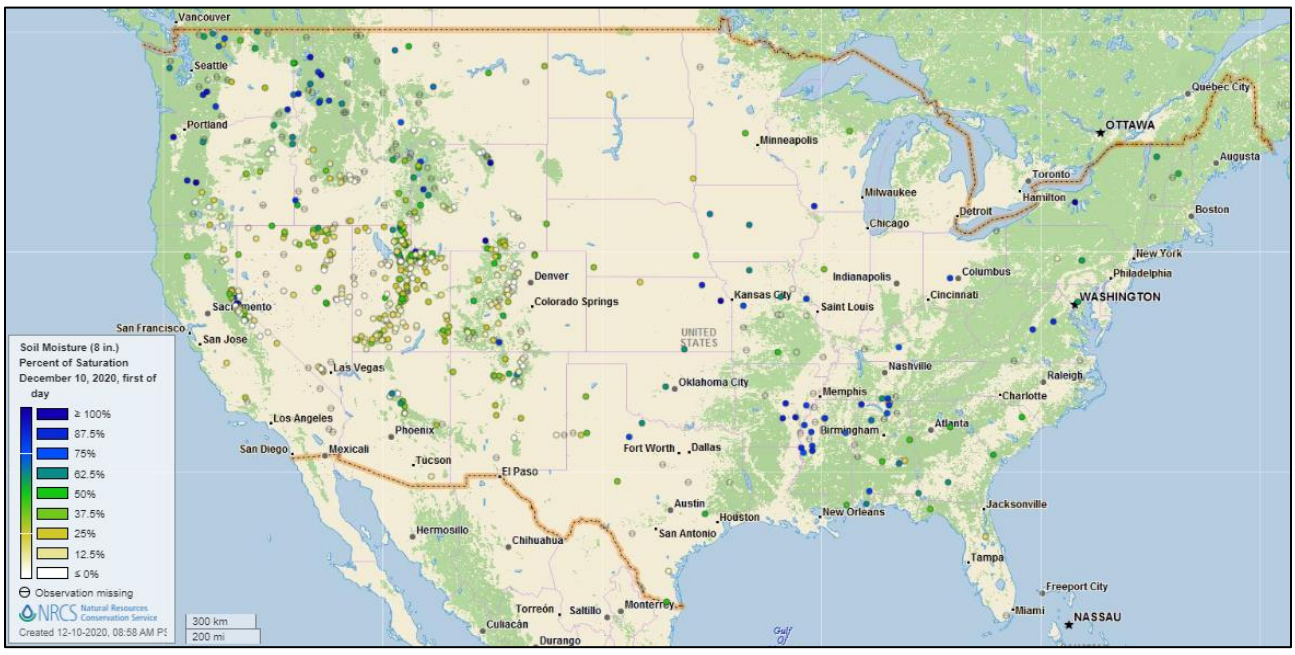
Source: NOAA National Centers for Environmental Prediction



Modeled soil moisture percentiles as of December 5, 2020

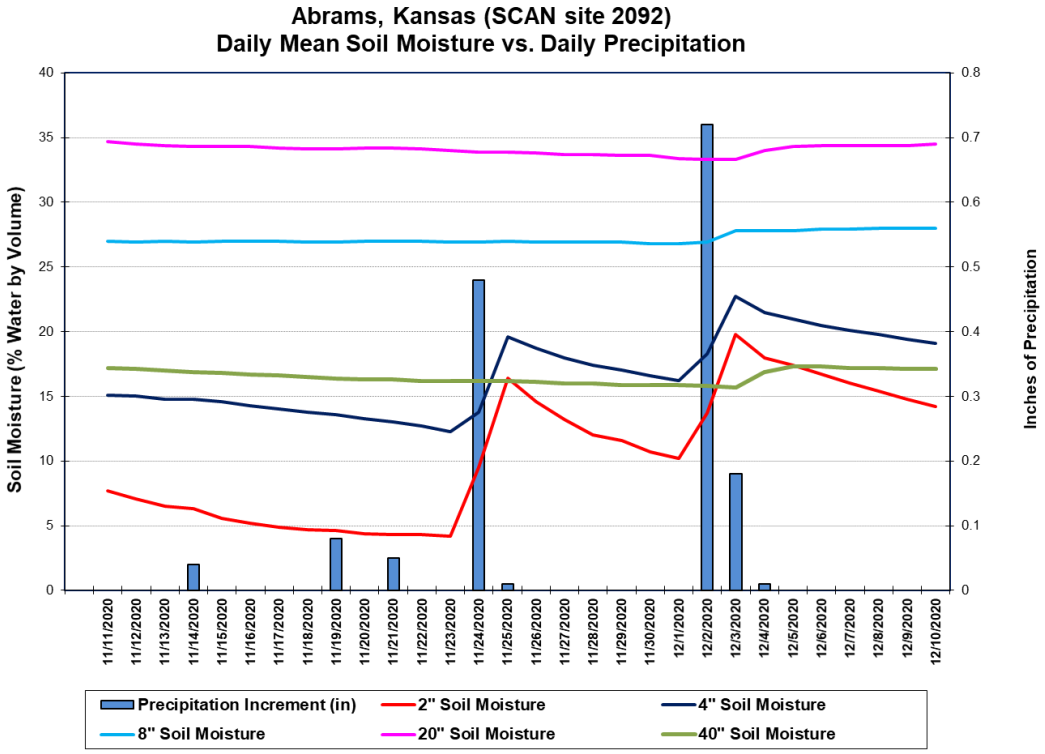
Soil Moisture Percent of Saturation

Source: NRCS SNOTEL and Soil Climate Analysis Network (SCAN)



Soil Moisture

Source: NRCS Soil Climate Analysis Network (SCAN)



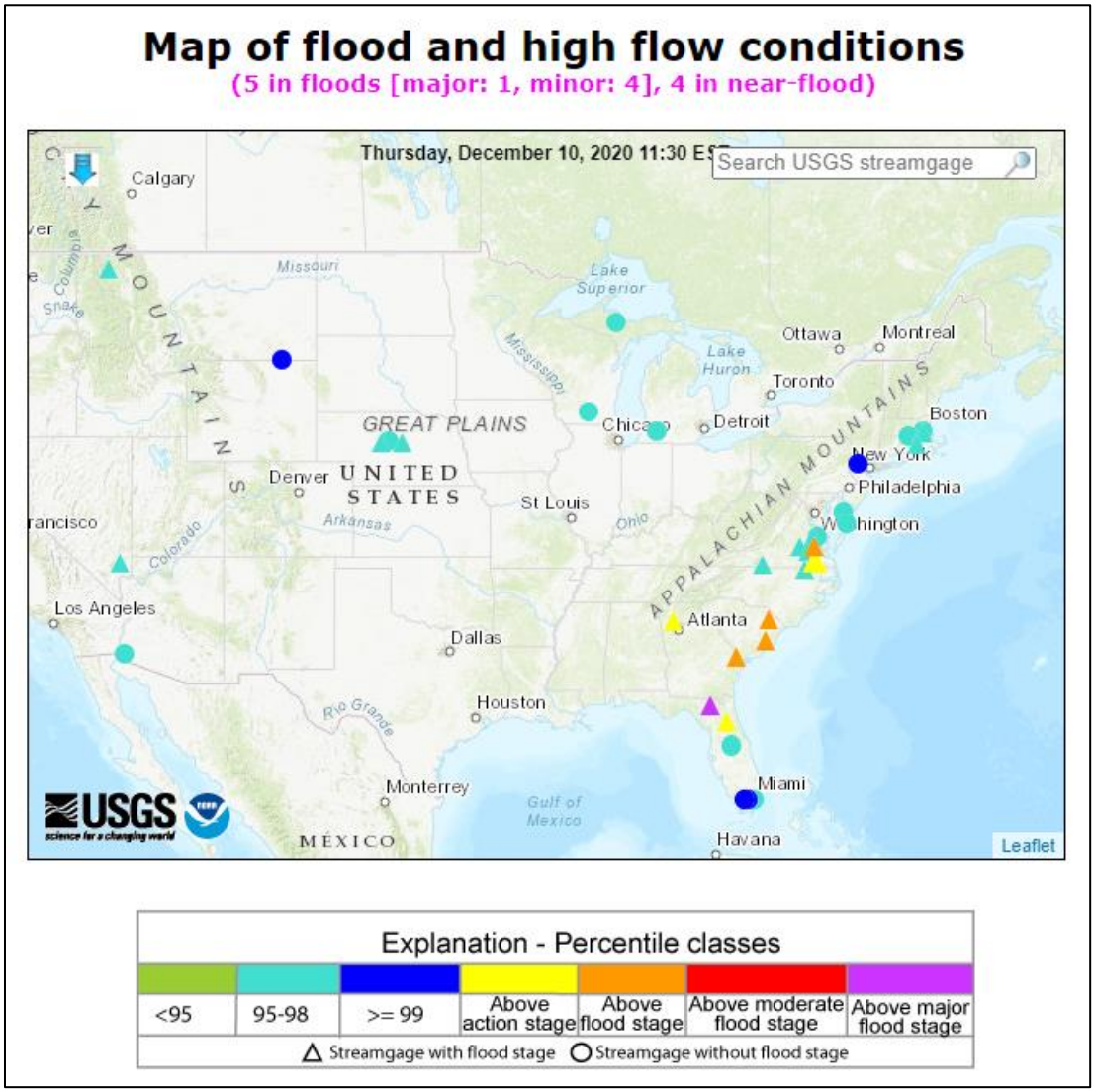
This chart shows the precipitation and soil moisture for the last 30 days at the Abrams SCAN site in Kansas. Precipitation of 0.91 on December 2-4 increased soil moisture at all sensors. Accumulated precipitation for the 30-day period was 1.57 inches.

Soil Moisture Data Portals

- CRN Soil Moisture
- Texas A&M University North American Soil Moisture Database
- University of Washington Experimental Modeled Soil Moisture

Streamflow, Drought, Flood, and Runoff

Source: U.S. Geological Survey

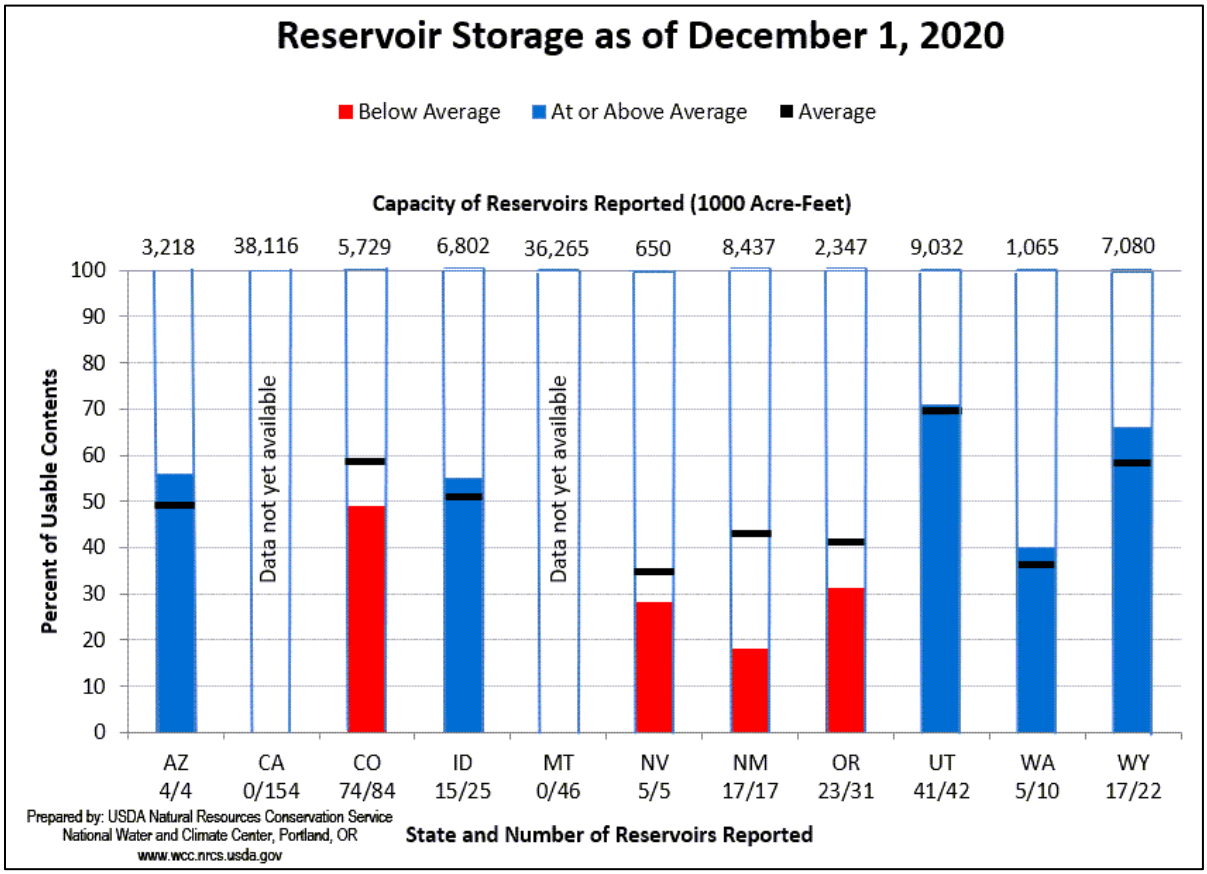


[WaterWatch: Streamflow, drought, flood, and runoff conditions]

Reservoir Storage

Western States Reservoir Storage

Source: NRCS National Water and Climate Center



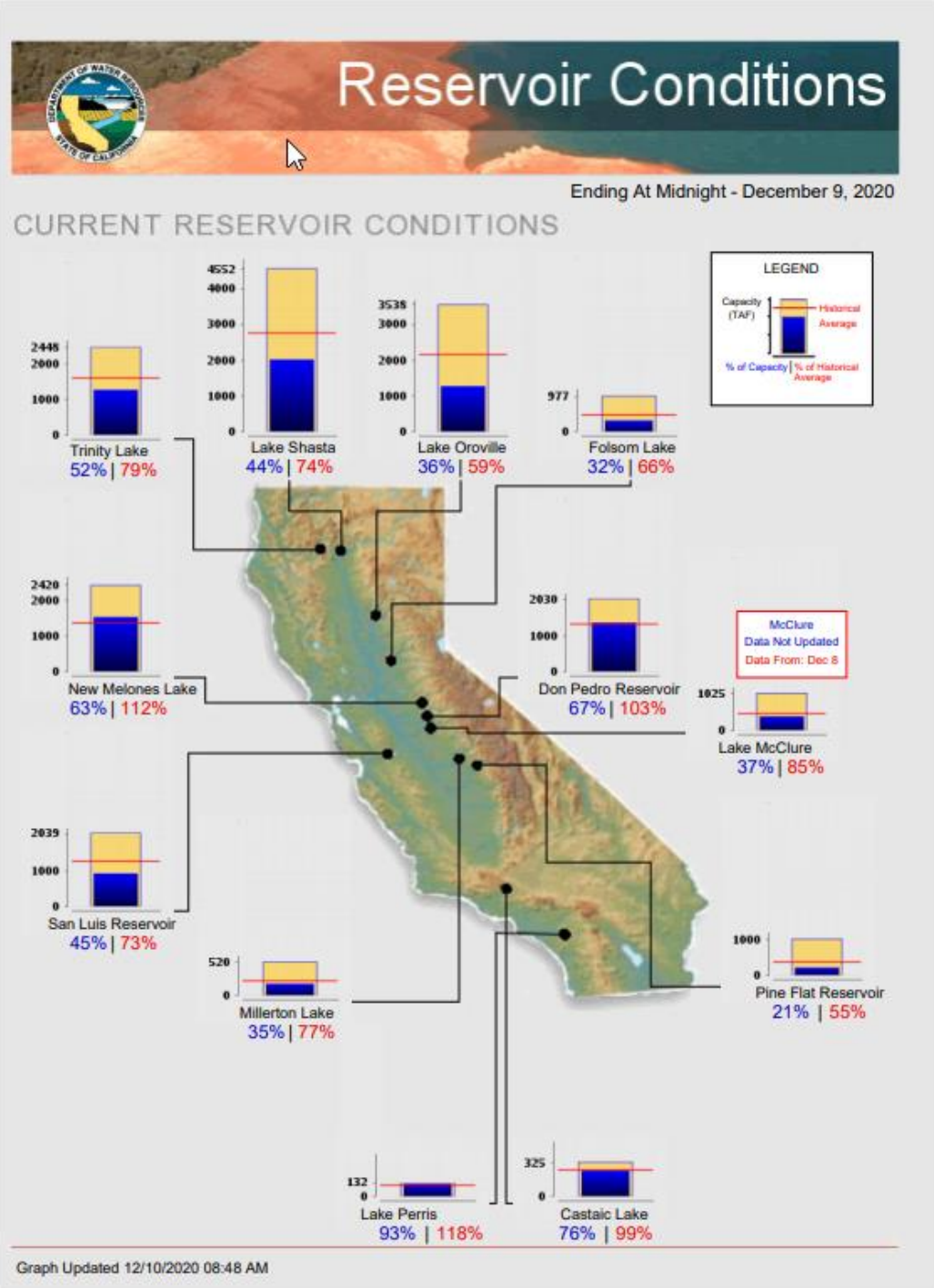
December 1, 2020 Reservoir Storage: Chart | Dataset

Hydromet Teacup Reservoir Depictions

Source: U.S. Bureau of Reclamation

- Upper Colorado
- Pacific Northwest/Snake/Columbia
- Sevier River Water, Utah
- Upper Missouri, Kansas, Oklahoma, Texas

Current California Reservoir Conditions
Source: California Department of Water Resources



Current California Reservoir Conditions

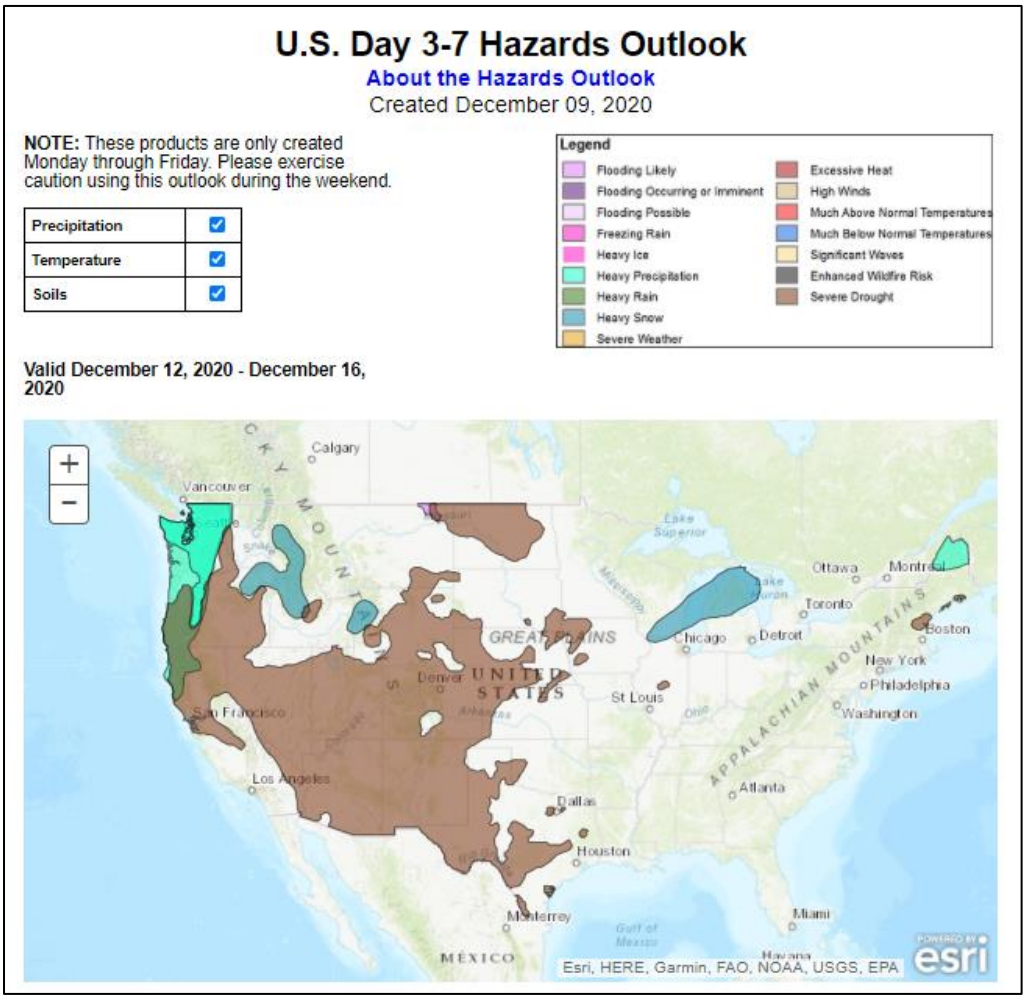
Agricultural Weather Highlights

Author: Brad Rippey, Agricultural Meteorologist, USDA/OCE/WAOB

National Outlook, Thursday, December 10, 2020: "A storm system currently crossing the Southwest will reach the middle Mississippi Valley by Friday night and the lower Great Lakes region on Saturday night. Snow will accumulate in the southern Rockies and along an axis stretching from southeastern Nebraska into northern Lower Michigan. Northern Maine may receive weekend snowfall. Meanwhile, storm total rainfall could reach 1 to 2 inches or more from the mid-South northeastward into southern Lower Michigan. Early next week, a trailing storm system has the potential to produce additional rain and snow in the southern and eastern U.S. Farther west, a series of Pacific disturbances will maintain unsettled, showery weather in the Northwest, especially from the Cascades westward. Precipitation will occasionally spread as far south as northern California. The NWS 6- to 10-day outlook for December 15 – 19 calls for the likelihood of near- or above-normal temperatures nationwide, except for cooler-than-normal conditions across the lower Southeast. Meanwhile, above-normal precipitation from the Pacific Northwest to the northern Plains, as well as much of the eastern U.S., should contrast with drier-than-normal weather across southern Florida and a broad area stretching from southern California to the central and southern Plains and the southwestern Corn Belt."

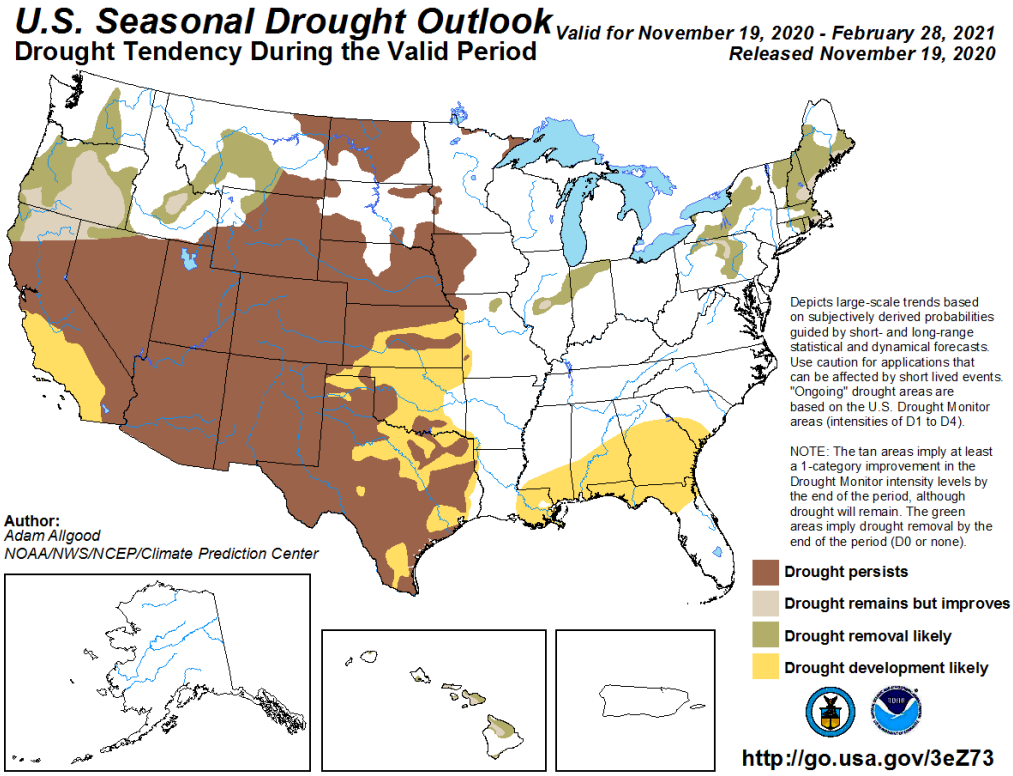
Weather Hazards Outlook: December 12 – 16, 2020

Source: NOAA Weather Prediction Center



Seasonal Drought Outlook: November 19, 2020 – February 28, 2021

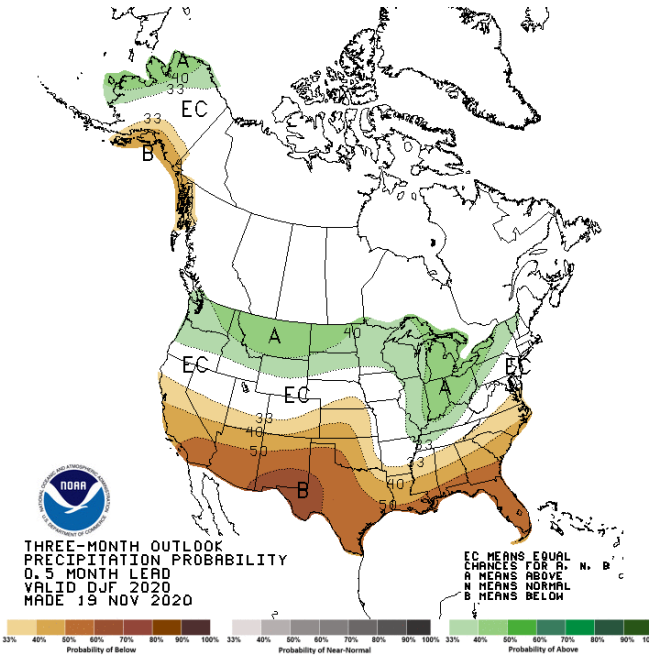
Source: National Weather Service



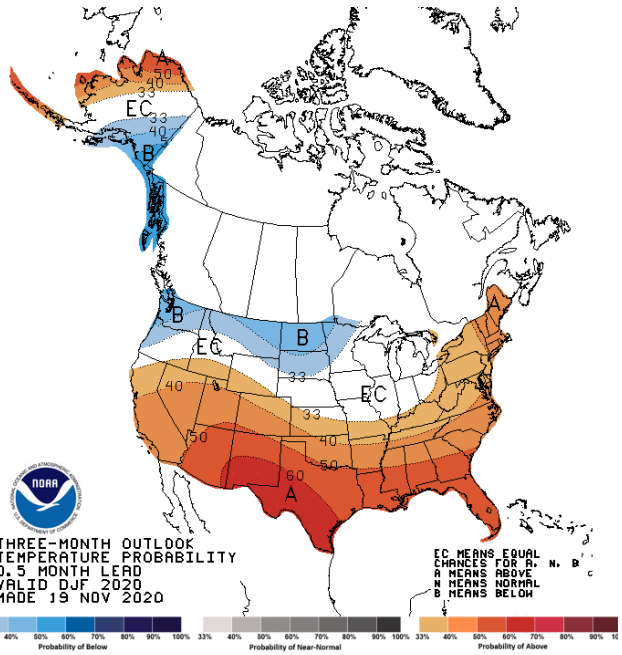
Climate Prediction Center 3-Month Outlook

Source: National Weather Service

Precipitation



Temperature



December-January-February (DJF) 2020-2021 precipitation and temperature outlook summaries

More Information

The NRCS National Water and Climate Center publishes this weekly report. We welcome your feedback. If you have questions or comments, please contact us.